

FIG. 1

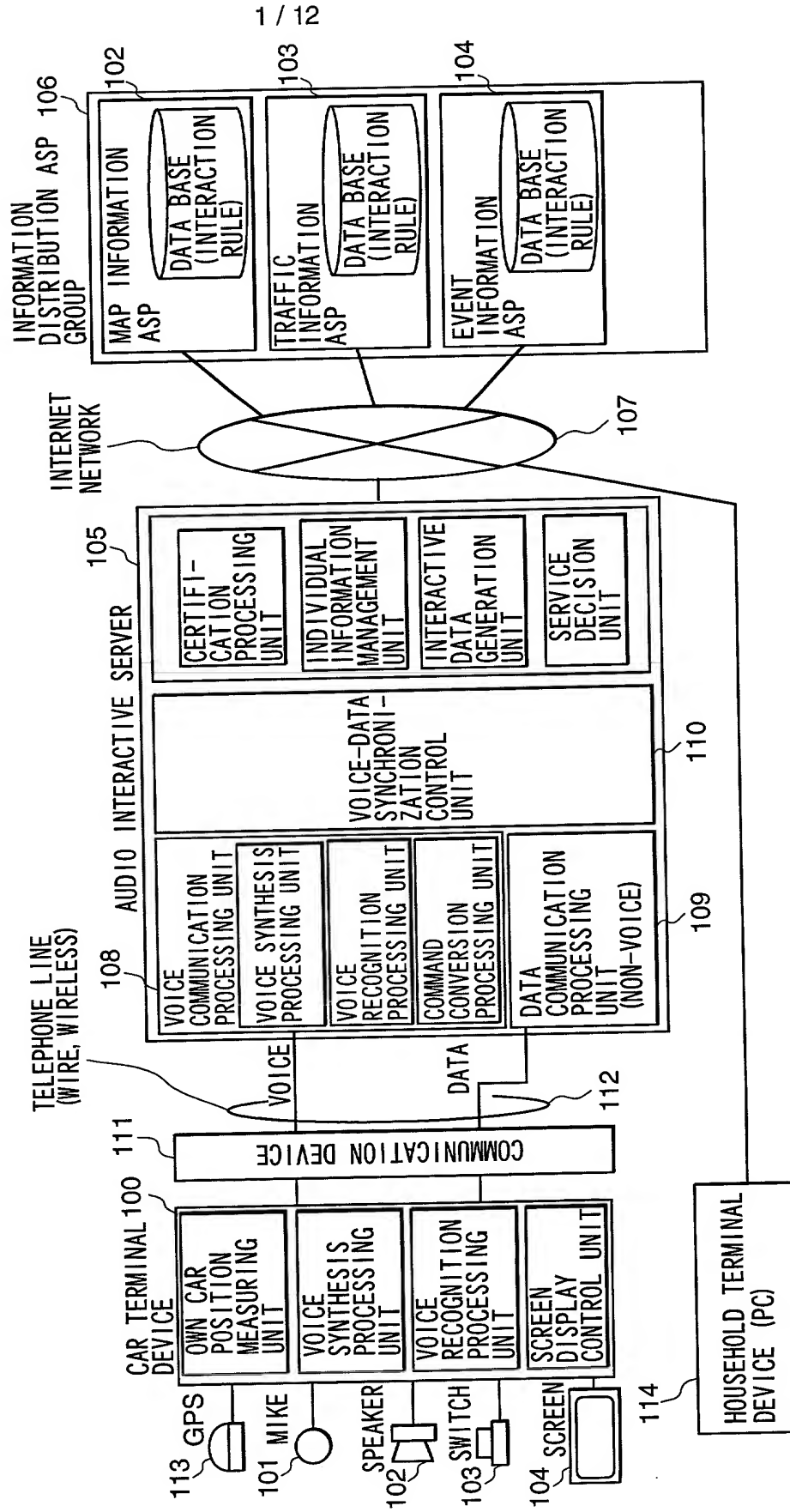


FIG. 2

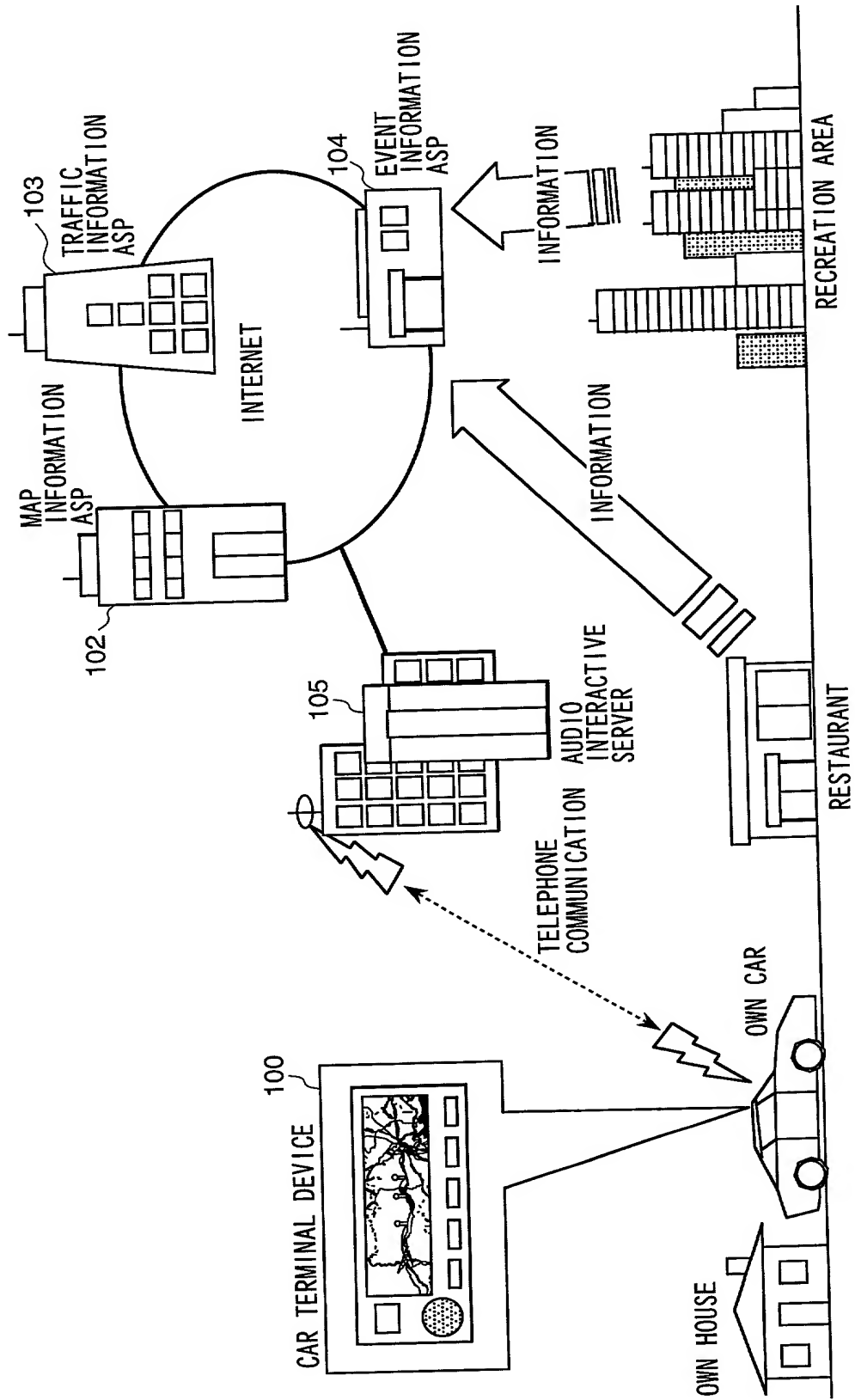


FIG. 3

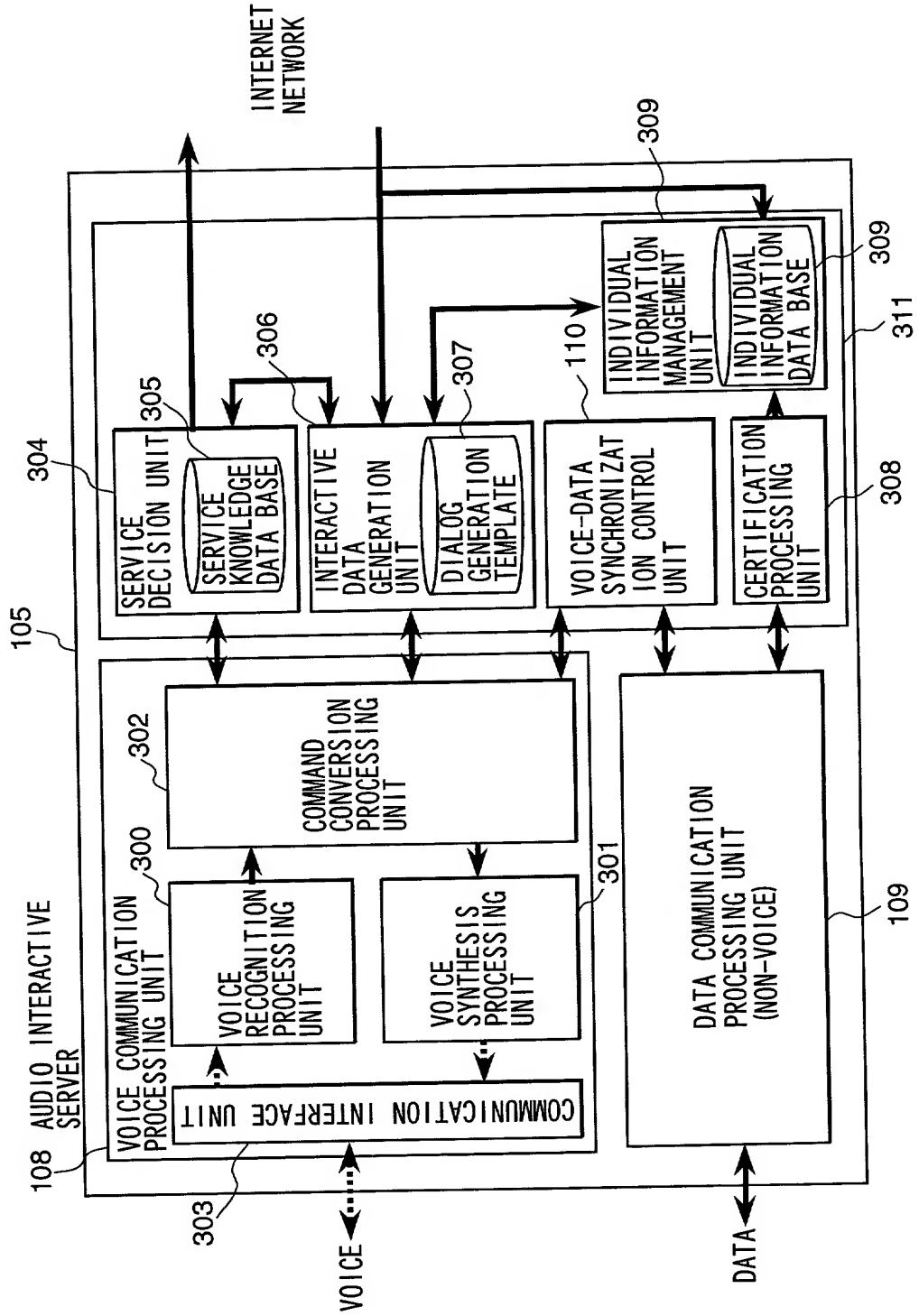


FIG. 4

401

```

<?xml version="1.0"?>
<vxml version="1.0">
  <form>
    <field name="where1">
      <prompt>
        %first_message_to_user%
      </prompt>
      <grammer src="%grammer%" type="application/x-isgf" />
    </field>
    </block>
    <submit next="%URL%" />
  </block>
</form>
</vxml>

```

402

EXAMPLE OF CHARACTER STRING EMBEDDING (LOCATION DESIGNATED) :

```

<?xml version="1.0"?>
<vxml version="1.0">
  <form>
    <field name="where1">
      <prompt>
        TO WHAT PLACE DO YOU GO?
      </prompt>
      <grammer src="where. gram" type="application/x-isgf" />
    </field>
    </block>
    <submit next="http://www. dra. example/where2. asp" />
  </block>
</form>
</vxml>

```

INTERACTION EXECUTION EXAMPLE:

COMPUTER: TO WHAT PLACE DO YOU GO?

HUMAN: A PARK

COMPUTER: NOT UNDERSTOOD

COMPUTER: TO WHAT PLACE DO YOU GO?

HUMAN: A PARK

COMPUTER: (GO TO [http://www. dra. example/where2. asp](http://www.dra.example/where2.asp))

FIG. 5

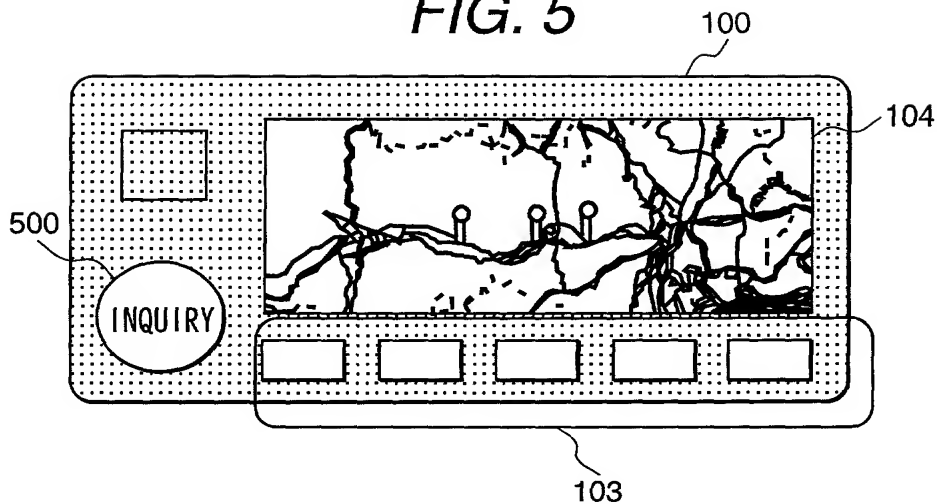
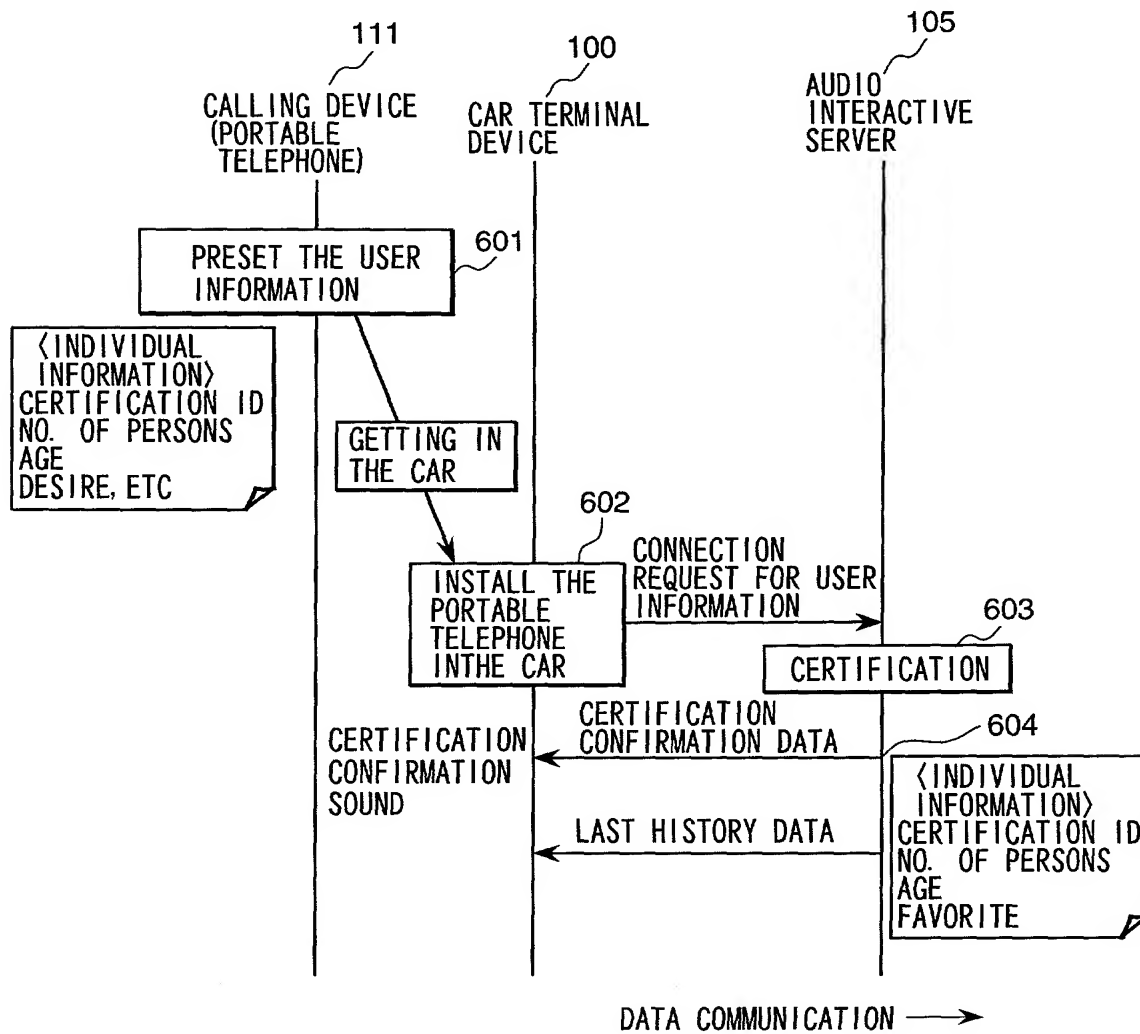


FIG. 6



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FIG. 7

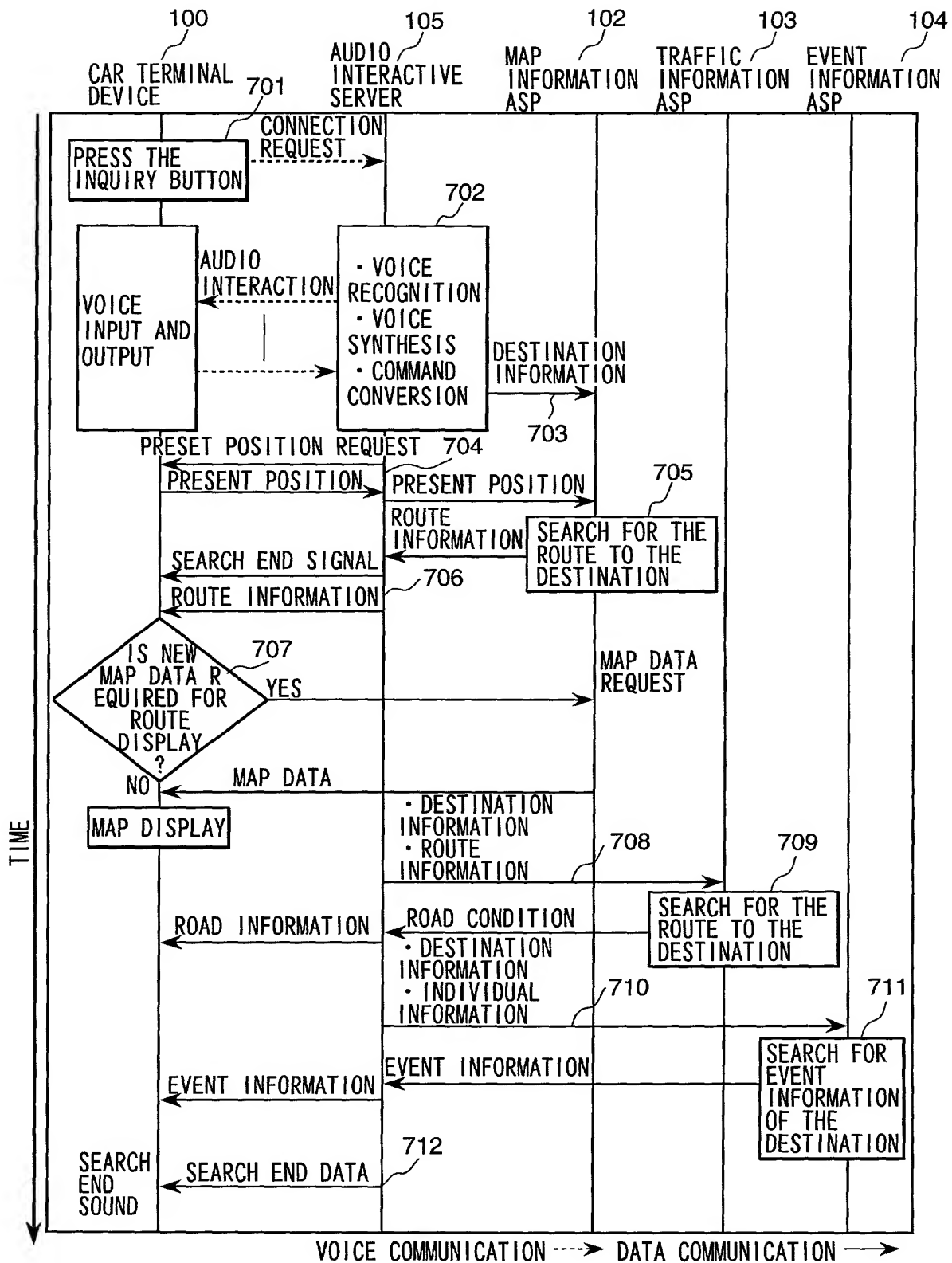
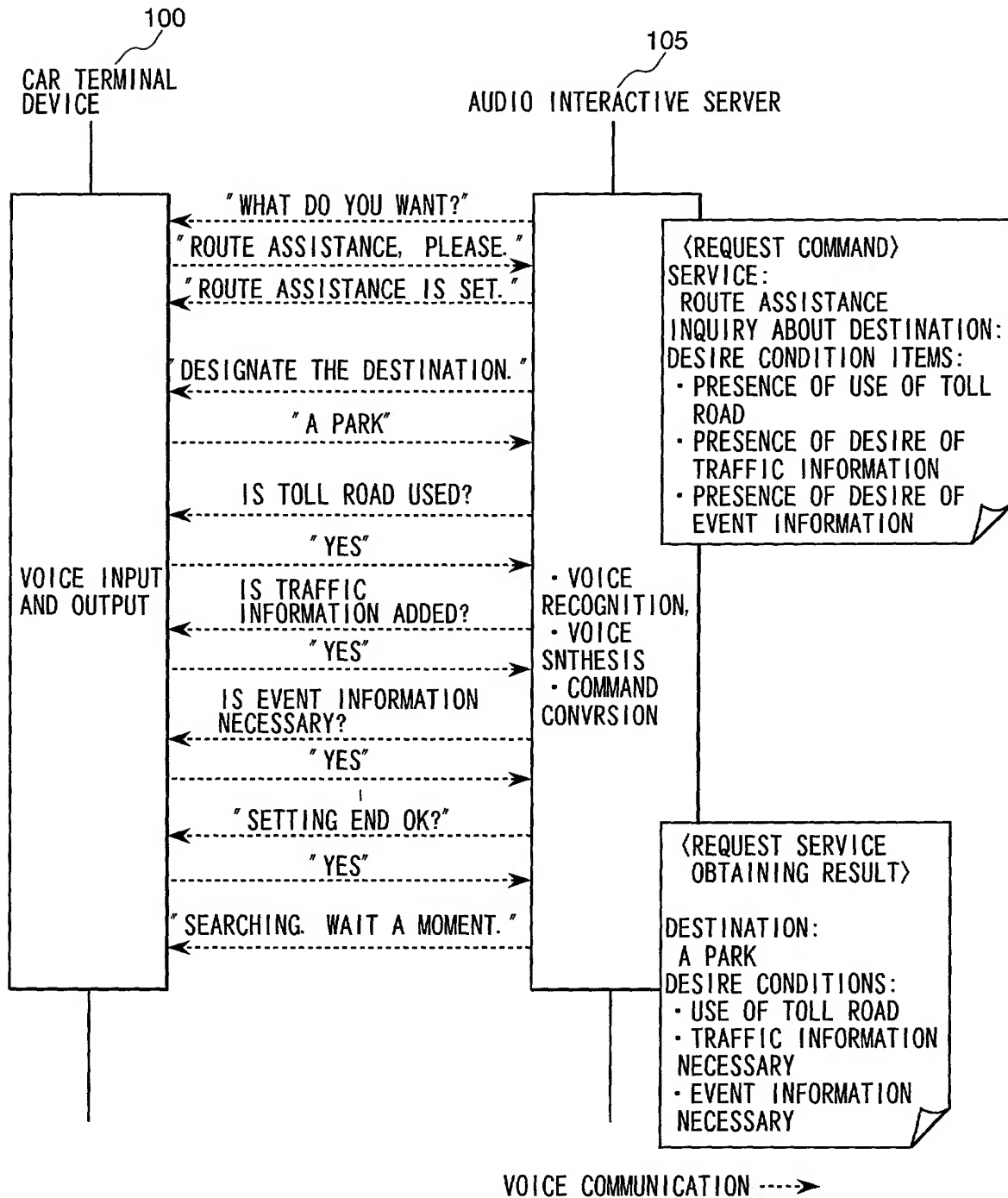


FIG. 8



The flowchart illustrates a system for providing route assistance and information to a car terminal device (100) via an audio interactive server (105). The system is controlled by a voice-data synchronization control unit.

Components:

- CAR TERMINAL DEVICE (100):** Includes a VOICE INPUT AND OUTPUT block and a SCREEN DISPLAY block.
- AUDIO INTERACTIVE SERVER (105):** Includes a VOICE RECOGNITION, VOICE SYNTHESIS, and COMMAND CONVERSION block.
- VOICE-DATA SYNCHRONIZATION CONTROL:** A central control unit that manages the interaction process.

Interaction Flow:

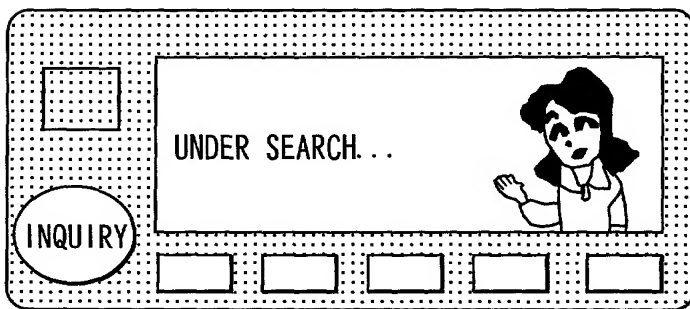
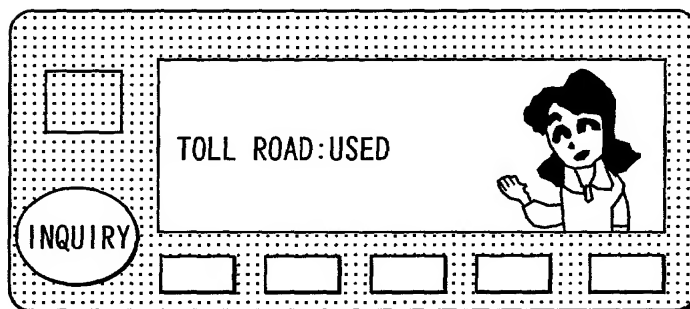
- The system starts with the VOICE-DATA SYNCHRONIZATION CONTROL sending a "ONE INTERACTION EXECUTION SIGNAL" to the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends a voice prompt "WHAT DO YOU WANT?" to the CAR TERMINAL DEVICE's VOICE INPUT AND OUTPUT block.
- The user speaks "ROUTE ASSISTANCE, PLEASE." which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "ROUTE ASSISTANCE IS SET." back to the CAR TERMINAL DEVICE's VOICE INPUT AND OUTPUT block.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'ROUTE ASSISTANCE'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.
- The user speaks "DESIGNATE THE DESTINATION." which is received by the AUDIO INTERACTIVE SERVER.
- The user speaks "A PARK" which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'A PARK'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.
- The user speaks "IS TOLL ROAD USED?" which is received by the AUDIO INTERACTIVE SERVER.
- The user speaks "YES" which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'TOLL ROAD:USED'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.
- The user speaks "IS TRAFFIC INFORMATION ADDED?" which is received by the AUDIO INTERACTIVE SERVER.
- The user speaks "YES" which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'TRAFFIC INFORMATION:YES'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.
- The user speaks "IS EVENT INFORMATION NECESSARY?" which is received by the AUDIO INTERACTIVE SERVER.
- The user speaks "YES" which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'EVENT INFORMATION:YES'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.
- The user speaks "SEARCH. WAIT A MOMENT." which is received by the AUDIO INTERACTIVE SERVER.
- The AUDIO INTERACTIVE SERVER sends "SCREEN DISPLAY DATA 'UNDER SEARCH'" to the CAR TERMINAL DEVICE's SCREEN DISPLAY block.

Legend:

- VOICE COMMUNICATION: Indicated by dashed arrows between the user and the server.
- DATA COMMUNICATION: Indicated by solid arrows between the server and the car terminal device.

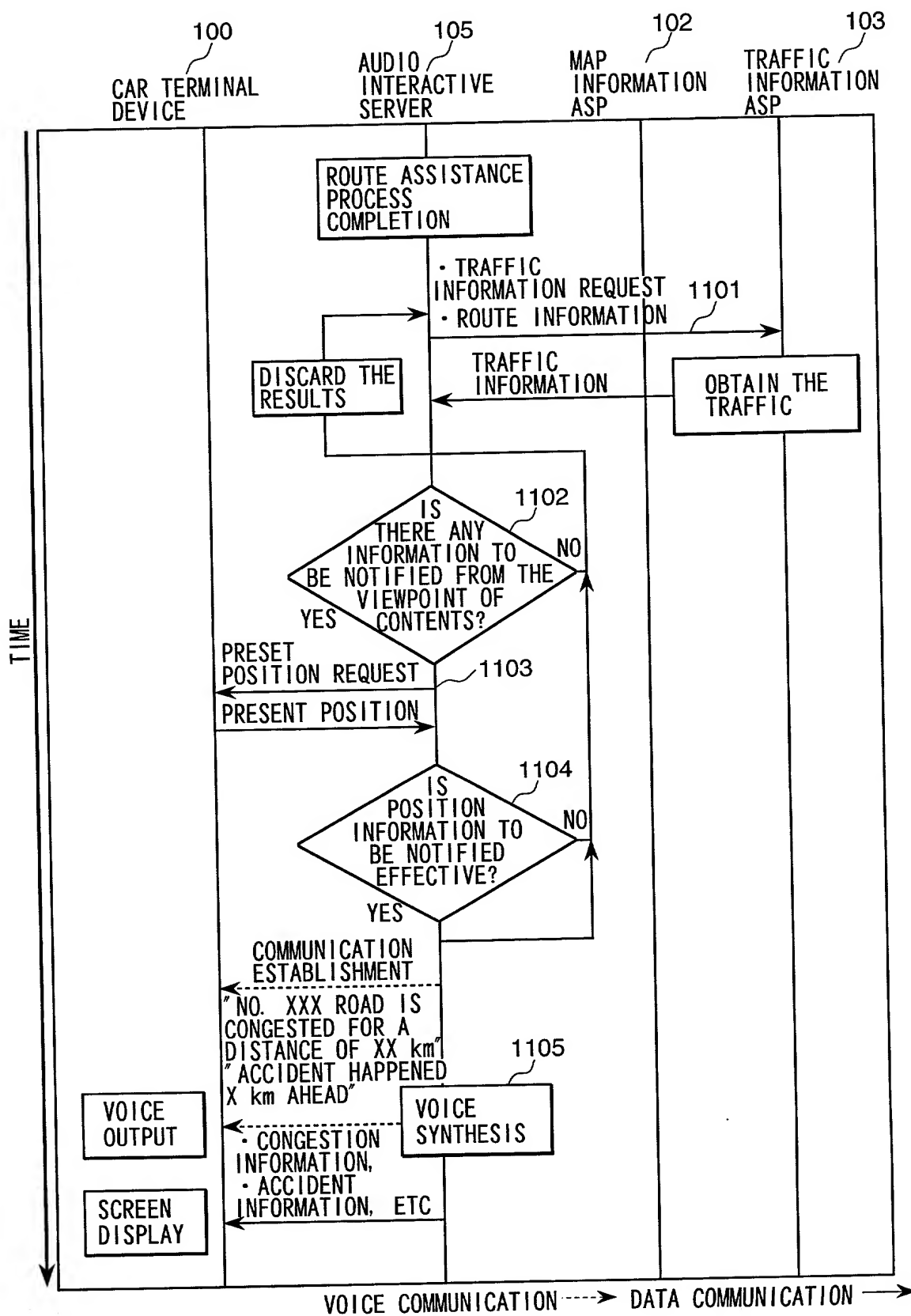
DATA COMMUNICATION →

FIG. 10



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FIG. 11



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FIG. 12

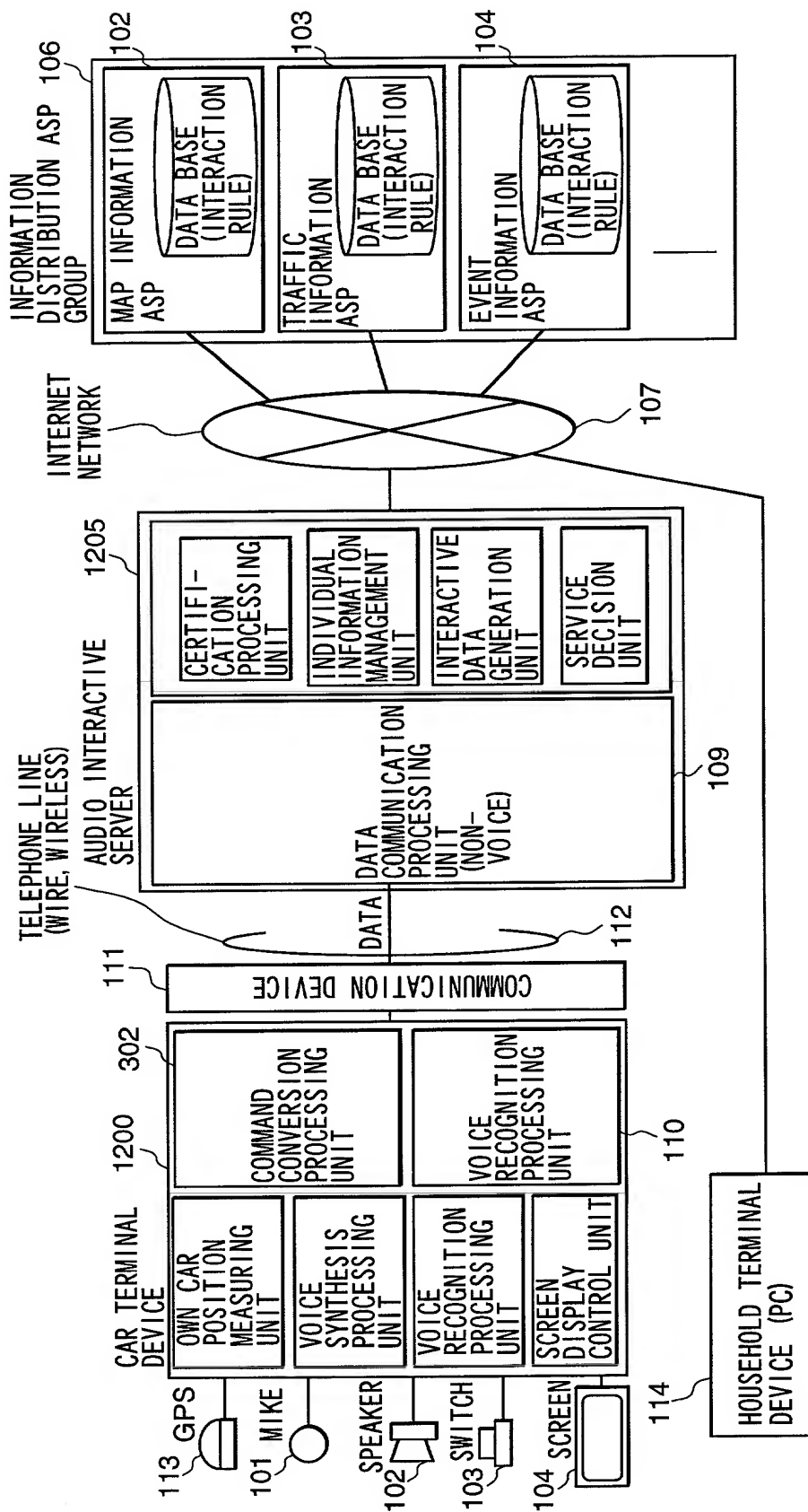


FIG. 13

